ABSTRACT

In a system for contact printing, two surfaces are brought into intimate aligned contact, under controlled pressure, without the entrapment of air. A controlled bow in a stamp pushes air ahead of a moving contact line between the stamp and a substrate. In one embodiment, the bow is created by a difference in pressure between the two sides of a flexible stamp. In an alternate embodiment, a flexible stamp is rolled into contact with the substrate. Alignment of the stamp and any previously patterned features on the substrate is accomplished with an X-Y translation stage or other suitable mechanism. If an optically clear stamp is utilized, features in the stamp and the substrate can be compared simultaneously and the relative position adjusted. In another aspect, a pattern in a thin film of liquid is created by liquid embossing on an offset substrate. The offset substrate is then brought into contact with the final substrate and the high regions of the liquid film are transferred to that substrate. The patterned film may be error-corrected before transfer to the final substrate.